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# COBRA 2010

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All papers submitted to COBRA were subjected to a double-blind (peer review) refereeing process. Referees were drawn from an expert panel, representing respected academics from the construction and building research community. The conference organisers wish to extend their appreciation to the following members of the panel for their work, which is invaluable to the success of COBRA.

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# **Gender inequality in post disaster reconstruction: does it prevail?**

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## **Abstract**

Dramatic increases in the occurrence of natural disasters and their immense impact on physical and social aspects of communities raised the attention of many for innovative solutions. Although disasters cease many opportunities and lives, the lives of survivors do not cease in the disaster affected areas. Even though many governments and other national and international institutions heavily involve in post disaster reconstruction, the success of those initiative remains in doubt due to lack of community involvement. It has been highlighted that involvement of communities could not only provide more effective solutions but also develop resilient communities to cope up with challenges during future disaster events.

There are many challenges that men and women face within post disaster reconstruction. However, due to internal and external vulnerabilities and incapacibilities women tend to face many challenges during post disaster phase. Further, although disaster management efforts are designed to benefit both men and women, in real practice a larger share of benefits and resources goes to men and women continue to remain marginalised. Many organisations have recognised the need to enhance women's position. Earlier study has found that post disaster reconstruction could provide opportunities not only to develop affected areas but also to further enhance their capacities. Therefore, post disaster reconstruction could be used as an opportunity to address women's challenges and enhance their state within the communities.



Although studies have highlighted the existence of gender disparity within post disaster reconstruction, they barely identify relevant empirical evidence. Hence, this study aims to examine whether gender inequality prevails within post disaster reconstruction. This study has been based on a theoretical as well as practical ideas obtained through a comprehensive literature review and interviews carried out among experts within the practice in Sri Lanka.

**Keywords:** Built Environment, Challenges, Disaster, Gender, Gender inequality, Post disaster reconstruction, Sri Lanka, Women

## **1. Introduction**

The resulting impact of natural disasters on communities and nations around the world draws the attention of many stakeholders of disaster management. The strength of an economy prior to disaster makes some of the countries to suffer more from disasters within the current economic crisis. The report by the World Bank Group and the International Monetary Fund (2010) states that the global economic crisis has slowed the pace of poverty reduction in developing countries, and is hindering the progress of other Millennium Development Goals. Global Monitoring Report (World Bank Group and the International Monetary Fund, 2010) states that the economic crisis is having an impact on several key areas of the Millennium Development Goals such as hunger, child and maternal health, gender equality, access to clean water and disease control. For example, organisations are more concerned about their profits than benefits and facilities to their employees due to economic crisis. This leads to gender inequalities within organisations. In certain cases, many people have been made redundant and it has ultimately affected their living. Furthermore, it has been predicted that the crisis on these issues will continue to affect development prospects well beyond 2015 (World Bank Group and the International Monetary Fund, 2010).

The world has witnessed many disasters around the globe. The increasing global temperature which is currently projected to rise up to 6.3 degrees Fahrenheit by the end of the century (United Nations Environment Program, 2009 cited Eilperin, 2009) is a major cause to future disasters. A study by United Nations found that even if the countries achieve their most ambitious climate promises they will not be able to reduce the temperature rise. This indicates that there will be an increase in occurrence of storms, floods, droughts, and heat related deaths, tropical cyclones (Broadbent and Broadbent, 2007). Further, the

gap between the earth plates and continuous settlement of those plates between countries and continents may create earth-quakes. This has been well observed during the last decade. Further, settlements between these earth plates are predicted and which could create more earth quakes and volcanoes. In addition, the mining of natural resources and deforestations could contribute to further disasters. Hence, there is a tremendous need for research on natural disasters.

Some of the nineteenth century's most devastating quakes were: In October 1948 an earth quake of 7.3 Richter scale that rolled through the area around Ashgabat in Turkmenista; in July 1976, another one with a magnitude of 7.8 that hit the city of Tangshan in north east China; in December 2003, an earthquake devastated the city of Bam in central Iran; a magnitude of 8.6 quake struck off the coast of Sumatra and this triggered tsunami waves which swept through the coastal regions of many countries bordering the Indian Ocean in 2004. In this order, the devastating earthquakes that hit China in May 2008, Italy in April 2009, Haiti in January 2010 can be seen. Later a magnitude 6.9 quake hit western China's Qinghai province in April 2010. In addition, the recent flooding in Pakistan and land slides in China during August in 2010, show the frequency of disaster occurrences and the extent of damage that it causes to communities and nations, and the extent of recovery need to cope up with the consequences. This frequency and the impact of natural disasters indicate the need for further attention on disaster management from the community to national and international level institutions.

Post disaster reconstruction can provide windows of opportunity for physical, social, political and environmental development within the disaster management settings. This could facilitate to reconstruct the impacted areas and also to improve the socio-economic and physical conditions of the impacted population in the long term (International Labour Organisation, 2003). However, in practice, too often disaster responses have not contributed to long-term development but they actually subvert or undermine it (Bradshaw, 2001; Anderson and Woodrow, 1998). This, results in lengthy post disaster reconstruction activities and the development opportunities are lost. The lack of involvement of both men and women in disaster management has exposed them to more potential dangers (Childs, 2006). A core and often neglected aspect of post disaster reconstruction phase has been the lack of inclusion of women and other vulnerable groups into rebuilding and community development. Previous studies have reflected the need for gender consideration in disaster management, and emphasised its importance in building disaster resilient communities (Ariyabandu and Wickramasinghe, 2003; Delaney and Shrader, 2000). Therefore, post disaster reconstruction could be used as an opportunity to address women's challenges and enhance

their state within the communities. Hence, there is a need to clearly identify whether gender inequality exists within post disaster reconstruction.

The study views gender inequalities as the obvious or hidden disparities in the treatment of both genders during post disaster reconstruction. The term inequality is referred to as differences or disparities while providing social and economic conditions to the affected communities (Collins English Dictionary & Thesaurus, 2000) through reconstruction. Although few studies have highlighted the existence of gender disparity within post disaster reconstruction, they barely identify relevant empirical evidence. Hence, this study aims to examine whether any differences exists while providing social and economic conditions through post disaster reconstruction to both genders. This study has been based on a theoretical as well as practical ideas obtained through a comprehensive literature review and interviews carried out among experts within the practice in Sri Lanka.

## **2. Literature findings**

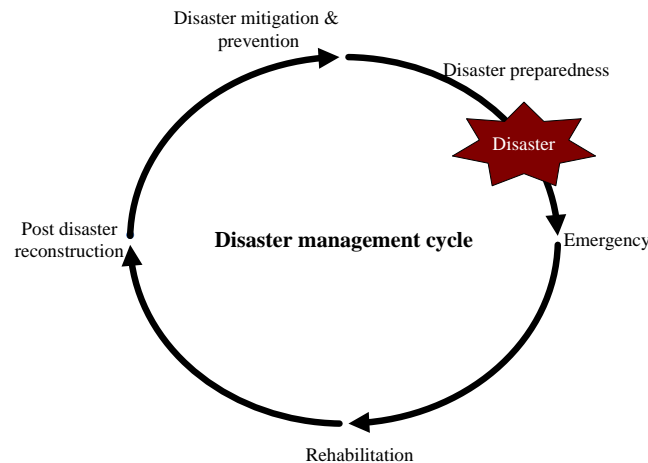
### ***2.1 Disaster Management***

Natural disasters can occur as slow-onset natural disasters such as droughts or as rapid-onset disasters. Hence, depending on the kind of disaster its management activities need to be varied. In addition, population's level of risk to disaster needs to be considered for the management of disasters. The level of risk to disaster is determined by the type of hazard and the calculation of the level of vulnerability which is determined by social, physical and attitudinal variables (Ariyabandu and Wickramasinghe, 2003). The degree of vulnerability of the affected population can be used to document the magnitude of a disaster (Ariyabandu and Wickramasinghe, 2003). Further, in order to reduce the magnitude of disasters individuals, organisations, government and international parties need to draw a strategy that could address the threats and weaknesses and incorporates the capacities and opportunities. This strategy could play its part during post and pre disaster situations. Although it is difficult to differentiate between different stages in management of disasters, generally disaster management cycle can be shown as per Figure 1. Under this cycle, each phase has its merits and special considerations. The disaster management cycle includes disaster mitigation and prevention, preparedness, emergency, rehabilitation and reconstruction (Delaney, and Shrader, 2000). Each phase in the disaster management cycle requires particular types of interventions and programming. According to Ariyabandu and Wickramasinghe (2003), disaster management is a collective term encompassing all aspects of planning for and responding to disasters which includes both

pre and post disaster activities. The disaster management cycle includes shaping of public policies and plans that either modify the causes of disasters or mitigate their effects on people, property and infrastructure. Further, it should be noted that disaster management should not be seen in isolation instead it should be considered at various phases of management cycle in addressing the issue.

In the natural disaster cycle, the pre-disaster phase includes mitigation and prevention and, preparedness. During mitigation stage activities are related to elimination or reduction of the probability of the occurrence or reduction of the effects from unavoidable disasters. The mitigation process includes building codes; vulnerability analysis; zoning and land use management; building safety codes; preventive health care and public education. During the disaster preparedness phase, measures are undertaken to control the impact of the event by ensuring a structured response and establishing mechanisms for effecting a quick and orderly reaction to disasters (International Labour Organisation, 2003). These are not aimed at preventing the occurrence of a disaster. This stage includes development of awareness among people on general aspects of disasters and how they need to behave in future by educating them about the disaster signs, methods of successful evacuation and first aid measures. In addition, formation and training of local committees, building of communication systems, meteorological observation systems, facilitation of basic utility systems such as water supply system and sanitation are some of the activities that can be undertaken during this phase.

The emergency response aims to provide immediate assistance to maintain life, improve health and support the morale of the affected population. The emergency phase involves immediate post recovery which can last for days, weeks or months depending on the nature of the disaster and local conditions (Jones, 2006). During the emergency phase, relief agencies or groups focus on preventing additional loss of life through actions such as search and rescue, emergency food and water, temporary shelter, and temporary transport. The focus of this phase is on meeting the basic needs of people until more permanent and sustainable solutions can be provided. Humanitarian organisations are often strongly present during this phase within the disaster management cycle.



**Figure 1: Disaster management cycle**

The rehabilitation and reconstruction phase include both short and long term and continue until all systems return to normal or to an improved status. The rehabilitation phase includes medium term interventions such as construction of transitional housing, provision of basic food to the affected population, provision of social services, road clearing, income generation, water system rehabilitation (Delaney and Shrader, 2000). As the emergency is brought under control the affected community is capable of undertaking a growing number of activities aimed at restoring their lives and the infrastructure that supports them. There is no distinct point at which immediate relief changes in to rehabilitation and then into long-term reconstruction development. The reconstruction period includes long-term and often substantial investment in rebuilding the physical and social infrastructure of affected regions which is referred as post disaster reconstruction phase. The construction industry contributes significantly towards the development of the communities within this phase of the disaster cycle.

## ***2.2 Post Disaster Reconstruction***

The post disaster reconstruction is a process that is the interaction of complex social, technological and economic factors and actions (Baradan, 2007). The position of disaster reconstruction within the whole disaster reconstruction cycle can be depicted as shown under Figure 2 (Baradan, 2007). Since this study views the research problem from the built environment's point of view and also centres within the post disaster context, the study researches on three phases of the disaster reconstruction cycle; Assessment; Planning; Reconstruction. There will be many opportunities during reconstruction phase to enhance prevention and increase preparedness, thus reducing vulnerability. Broadbent (2003) states that post disaster reconstructions could provide platform to generate local employment. Although many

organisations get involved in post disaster phase, most often they focus on emergency phase and the reconstruction remains neglected (Jayaraj, 2006). Johnson and colleagues (2006) argue that 'reconstruction projects are sandwiched between the short-term necessity to act promptly and the long-term requirements of sustainable community development'. Further, the importance of incorporating communities within post disaster reconstruction has been widely highlighted within literature (Johnson et al., 2006; Aldunce and Leo'n, 2007). Therefore, it is necessary for organisations working on disasters to utilise opportunities and develop community's capabilities during post disaster reconstruction.

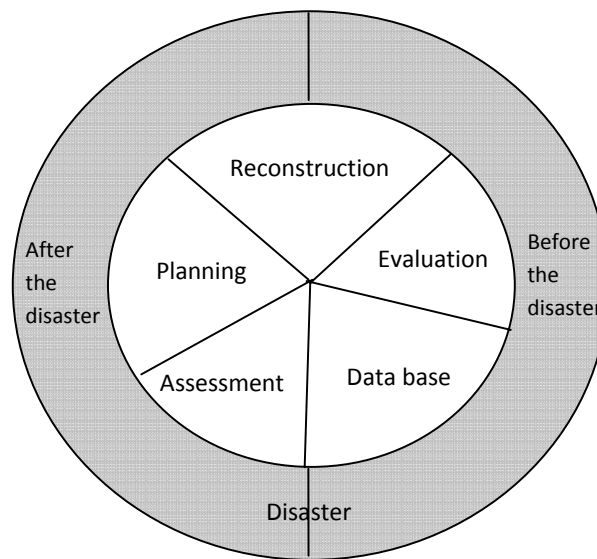


Figure 2: Post disaster reconstruction process (adapted from Baradan, 2007)

Broadbent and Broadbent (2007) view disaster as a major consumer at the end of the supply chain of the construction sector. The extent and the speed of its consumption show the significance of disasters on the built environment. While the predictions for future disasters are capturing the headlines the construction sector needs to seriously consider effects that disasters can leave behind. For post-tsunami recovery a total committed or spent fund was nearly US\$11 billion. Within this fund, around US\$2 billion has already been spent for short term humanitarian relief. While remaining US\$9 billion was allocated for longer term rehabilitation process (Tsunami Recovery Network, 2005). This shows that about 80% of the funds were allocated for post disaster reconstruction stage where the construction sector plays a major role. The built environment could treat each future disaster as an individual project and try to develop management principles (Alexander 2002) to be applied within the post disaster reconstruction. This indicates the need

to consider the post disaster reconstruction as a new direction for the construction professions and related sectors.

It was noticed that during post disaster stage, many stakeholders show their dissatisfaction and sometimes frustrations on the progress of post disaster reconstruction. Broadbent and Broadbent (2007) state that no stakeholders feel satisfied with the current progress in addressing the needs of the Asian Tsunami, the Pakistan Earthquake or Hurricane Katrina. Jones (2006) state that post disaster recovery is jeopardised by institutional constraints, gaps in communication, lack of access to professional skills and knowledge in order to support local effort and failures in management and planning. It is recognised that the capacity for reconstruction is conditioned by many dimensions of resilience, covering various intensities of social, economic, environmental and technological aspects (Broadbent and Broadbent, 2007). Further, it was acknowledged that religious and political dimensions to the resilience can contribute to a successful and timely recovery.

Jones (2006) identified that permanent reconstruction is often inefficiently managed, uncoordinated and slow to get off the ground. This leads to further sufferings for communities for a longer period of time. Some remain in temporary shelters and wait without any hope for their new homes. In certain cases the constructed property does not satisfy the local requirements and left abandoned or unutilised. This was mainly due to inappropriate design or lack of consultation with the community. In order to over this problem some organisations adapt different strategies for construction of houses. Barenstein (2006) found that during post Gujarat earthquake five different housing reconstruction approaches employed in Gujarat. They are: owner-driven approach; subsidiary housing approach; participatory housing approach; contractor-driven approach in situ; and contractor-driven approach.

The owner driven approach facilitates communities to take on building work themselves, with external financial, material and technical assistance. This approach allows the owners to retain full control over the housing reconstruction process within given building codes. Within the subsidiary housing approach agencies do not engage directly in housing reconstruction instead, they play a facilitator role, providing additional material and technical help within the framework of government assistance. Under the participatory housing approach, agencies assume a leading role in housing reconstruction, while involving home-owners in the planning, design and reconstruction of the house. While the contractor-driven

approach in situ, involves tasking a professional building contractor to design and build the houses, the contractor-driven approach ex nihilo, uses professional building contractors. The difference between the in situ and ex nihilo approaches is that, in the ex nihilo approach, the entire village is rebuilt on a new site. These approaches show that depending on the capabilities of community and the available resources and support the reconstruction process could adapt different approaches to facilitate a successful delivery. This can not only enhance construction's performance but also develop communities' capacities.

Jones calls recovery as a 'reconstruction-plus'. That is reconstruction is a prospect to construct things better than before. The post disaster reconstruction can be considered Disaster has been recognised for the ideal opportunities that it provides to introduce timely, practical and latest solutions. After Hurricane Katrina, the reconstruction in fact provided an opportunity for many local hotels to renovate or reconstruct them. Further, it was recognised that the reconstruction brought many hotel rooms out of inventory (Guillot, 2007). Some locals invested in alternative businesses in different locations to overcome any losses from future disasters. This boosts tourism and improves local employment and finally leads to improved local economy. In this instance, the post disaster reconstruction has not only provided opportunities for construction sector but also for communities during and after post reconstruction stage.

This shows that disasters are in fact can turn into opportunities and learning experiences. However, Moe (2006) identifies that unclear goals and failure to include relevant information for each phases of project life cycle, design, procurement, implementation, operation and maintenance lack as issues that contributes to the failure of reconstruction. Broadbent and Broadbent (2007) stated that political and religious practices and behaviours condition the institutional frameworks under which all the organisations operate at a local level. Further, in order to carry out disaster management activities, the process requires finance or equivalent. This will assist to mobilise unskilled labour, semi-skilled labour, skilled labour, management, materials, consumables, plant, equipment, vehicles and machinery. Broadbent and Broadbent (2007) recognised that although, all stages in the disaster management cycle require these resources reconstructions requires a significant portion.

In order to make the reconstruction process a sustainable one, the local community needs to be included within the process. Broadbent and Broadbent (2007) recognised the link between the UK sustainable development guiding principles and the post disaster reconstruction. The UK sustainable development



guiding principles which aspires for sustainable development based on living within environmental limits and a just society, and this is to be delivered by means of sound science, sustainable economy and good governance. Under these consolidated principles, it has four aims. They are, respecting the limits of the planet's environment; meeting the diverse needs of all people; building a strong, stable and sustainable economy which provides prosperity and opportunities for all; promoting participative systems of governance. This shows the importance of considering the needs of all people and also promoting participative approaches in order to make the post disaster reconstruction sustainable. However, in order to enhance community's position they have to be given the opportunity for their voice and also power in the decisions that affect them.

In addition, the Millennium Development Goals and the European Union Sustainable Development Strategy too support for effective incorporation of social, environmental and economic objectives to deliver sustainable development, especially for the poorest members of society. It can be noted that these guidelines and strategies also facilitate for an effective disaster management, especially for poverty and the vulnerable people. Inclusion of communities within the post disaster reconstruction could provide a platform for major behavioural changes within the society. Education could play a major role in raising awareness and also in developing new skills and knowledge to build better behaviour. This could prepare the individuals to take up their role as active members of the communities (Broadbent and Broadbent, 2007). They could not only contribute to post disaster reconstruction but also to help them to develop their resilience. Hence, post disaster reconstruction should make efforts to include the communities, not only to provide opportunities to make their decisions and but also to develop their capacities to take up the responsibilities.

### **3. Findings**

This paper is based on the first phase of data collection which is part of the main study 'empowering women in post disaster reconstruction'. The first phase gathered experts' opinions on current state of women's empowerment, factors affecting or enabling empowerment, current frameworks and policies, etc. However, this paper focuses on the issues that women face and examines whether gender inequality prevails in post disaster settings in Sri Lanka. During this phase of data collection, data was collected through semi-structured interviews and document reviews. The interviews were chosen as a method of data collection for this phase due to their appropriateness and flexibility.

Kvale (2009) state that interviews are more suitable method of data collection for capturing experiences and meanings of the subjects in the real world. While explaining about interviews Flick (2009) state that, 'The research interviews is an inter-view where knowledge is constructed in the inter-action between the interviewer and the interviewee' (Kvale, 2009). Interviews allow participants to convey their own situation in their own words from their own perspective to the researcher. In this phase, semi-structured interviews were used since it could facilitate the collection of both structured information and also participants' views and opinions. Further, interviews can assist the researcher to ask for spontaneous questions as the first phase seeks to collect rich and wider area of field information, and can provide a comfortable environment to the interviewee. The analysis of the interviewees' responses was processed through a procedure outlined by Hall and Hall (1996). This process involved three activities: data reduction, data display, and conclusion drawing. The interviews were firstly recorded and later transcribed. Finally, they were analysed using content analysis. This section of the paper examines the state of post disaster reconstruction in Sri Lanka and investigates the concerns of communities especially women within post disaster context.

### ***3.1 Post disaster reconstruction in Sri Lanka***

The tidal waves that were created by a series of earthquakes that occurred in the sea near Sumatra, Indonesia on the 26th of December 2004 haunted many people. These tidal waves struck the eastern, southern and northern coasts of Sri Lanka and few parts of western coasts sweeping people away, causing flooding and destruction of infrastructure. The government of Sri Lanka has recognised the importance of having proper measures for rebuilding permanent infrastructure in order to carry out effective tsunami recovery (Government of Sri Lanka and joint partners, 2005).

The tsunami damaged or destroyed more than 100,000 houses, which amounted to 13% of the total housing stock in coastal administrative divisions. Sri Lanka faces many challenges during its reconstruction phase. Although guaranteed external assistance seemed to be more than adequate for reconstruction costs the subsequent problems with regard to relief payments, providing credit facilities, distribution of funds, coordination of reconstruction activities, and mismanagement of funds hindered the reconstruction progress (Jayasuriya et al, 2005). Further, poor coordination among domestic and external agencies has created serious problems in providing humanitarian assistance to people and in balancing

sensitive issues in political arena. The study on post tsunami recovery process in Sri Lanka (Ratnasooriya, Samarawickrama and Imamura, 2007) highlighted that housing reconstruction efforts have not succeeded in achieving the targets due to lack of consultation among all stakeholders, unawareness of those affected of their entitlements, confusion caused by the revision of the buffer zone and the resulting additional demand for housing, escalation of the cost of building materials, limitation on the capacity of the local construction industry, and the lack of sustained commitment of some of the donor agencies.

There was an extensive damage to the national roads by the tsunami. Tsunami damaged a total length of nearly 700 km, representing nearly 5% of the total national road network since many national roads were located near to coastline. Even prior to Tsunami, an estimate of nearly 60% (Jayasuriya et al, 2005) of the entire road network was in a deteriorated condition due to lack of maintenance and damage and neglect during the 20 years of civil war, particularly in the north and east. The total damage of Tsunami to the road sector was estimated to be approximately US\$50 million (Jayasuriya et al, 2005). It was found that the donors were quick in committing funds for road rehabilitation.

Another important infrastructure facility that was severely damaged was railway infrastructure. The tsunami caused disruption to rail services in the north eastern, eastern and southern corridors. However, damages to north eastern and eastern corridors were not severe compared to the southern corridor. The total damage to rail track, railway infrastructure and rolling stock was estimated to be US\$ 26 million (Jayasuriya et al, 2005). During post Tsunami reconstruction process, the restoration of rail services in the southern corridor was considered to be a speedy achievement. In addition to the prevailing water shortage in certain areas, Tsunami affected the water supply and sanitation systems of those areas. Although many efforts had been taken to restore this service and provide additional supply, it was observed that due to the relocation of communities, some existing networks need to be expanded and parts of them have become redundant (Ratnasooriya, Samarawickrama and Imamura, 2007). Under the water sector, the government highlighted the challenges with regard to sustainable maintenance of water/gully bowers and packaged water treatment plants, securing local counterparts funding, commencement of sanitation studies and development of sewerage for new settlements, further improvement of hygiene practice and strengthening significantly the sanitation sector (Government of Sri Lanka and joint partners, 2005).

The report by Government of Sri Lanka and joint partners (2005) states that the national construction industry does not have the required number of contractors, equipment, skilled workforce, modern management practice and access to necessary finance in order to maintain the required speed of the entire Tsunami reconstruction work. Hence, the government proposed to engage and team up with international contractors and to provide training to local contractors in order to solve the above problem and to develop the affected community. Further, under the cash for work schemes by Non-Governmental Organisations (NGO), the community based organisations and small contractors were encouraged to get trained in labour based contracts to reduce the pressure on main contractors and to improve the quality of infrastructure.

Reconstruction process can play a major part in not only developing the affected area but also for future occurrence of disasters. The poor level of existing social and physical infrastructure facilities can turn hazards into disasters or the inappropriate development can itself be the cause of disasters. A previous study emphasised that although many houses and infrastructure facilities were constructed the effectiveness of their use do not provide adequate return to them (APWLD, 2006). This indicates the importance of considering the needs of local communities and including their local knowledge into reconstruction stage.

The social condition of Sri Lanka is much better than of her South Asian neighbours (Department of Statistics and Census, 2005) in the accomplishment of human development goals. Life expectancy in Sri Lanka is 72 years (Department of Statistics and Census, 2005). Further, the granting of free education facilities to the entire population has made a rapid upliftment in literacy levels, and given an opportunity for both the rich and the poor alike to pursue higher education. This makes the literacy rate in Sri Lanka to about 91.5%. According Department of Census and Statistics (2009) the male literacy rate is 92.8% and female literacy rate is 90.3%. Hence, adequate measures should be taken to utilise the current social conditions in order to deliver a better environment for the community especially issuing their own resources. The inclusion of women can provide opportunities to develop required skills and income earning opportunities for their enhancement. The following section looks into the concerns that women face during post disaster reconstruction.

### ***3.2 Gender disparities in post disaster reconstruction***

The study found that although, decisions regarding resource allocation, enforcement of land and building regulations and investment on economic and social development are made with an intention to satisfy both genders in real practice gender inequalities prevail while implementing them. Pyles (2009) recognises that a core and often neglected element of disaster recovery has been the rebuilding and community development phase. Morrow and Peacock (1997) recognised that low income and marginalised communities are likely to suffer from downward spiral of deterioration after a disaster. Further, Sundet and Mermelstein (1996) found that high poverty rates in communities were associated with the failures to survive. This can be seen in many occasions within the research on disaster. Therefore, in order to enhance both genders' position and to improve post disaster reconstruction this section of the paper examines the gender disparities that exist within post Tsunami reconstruction.

It has been widely stated that women have been most affected by the Tsunami and in many occasions they have been referred as vulnerable groups (Ariyabandu and Wickramasinghe, 2003; APWLD, 2006; Women's coalition for disaster management, 2005). The study found that women face many challenges during post disaster reconstruction such as poor procedures in capturing women's demands and the their ways of living; patriarchal systems that exists within the community of disaster management cycle; lack of experience/knowledge on construction of houses; poor management of construction and financial management; lack of knowledge on the usage of new technology; etc. Further, it was found that some of the women's needs and challenges at different phases of reconstruction are different to each other. While some needs may not continue to the next phase the other continue to remain till a solution is given. In addition, these challenges are interconnected. This section of the study mainly looks into the challenges that are directly related to disaster reconstruction apart from other challenges that are not directly related to disaster reconstruction such as poor access to health and other services, violence against women, other human rights issues, etc. Although the challenges under second category do not directly fall under reconstruction activities the link and inter connections between benefits and activities link them together.

The study found that during the phase of planning and designing of shelters, women find that poor procedures in capturing women's demands and their ways of living lead to construction of inappropriate houses. The study by Women's coalition for disaster management (2005) also found this problem. Further, the guidelines used by the agencies/institutions were not clear about the definitions and about people to whom that the support can be provided. For example, a government initiated agency which worked on disaster reconstruction claimed that it will encourage 'household-driven housing reconstruction' while it

does not clearly define the word household, especially to extended families who live in the same house. Women's coalition for disaster management highlighted the importance of providing compulsory criteria for including women in decision making bodies in order to avoid dismal representation. Since certain organisations such as the Village Rehabilitation Committees and Divisional and District Grievance Committees play a very important role in the reconstruction by being responsible for making the beneficiary lists, administering and disbursing grants, and providing resolutions to disputes, it is important to maintain women's representation. This could avoid any discrimination.

It was highlighted within this study that women's contributions to post disaster resilience have been underestimated. Similar to using a generic term 'he' especially in written documents, linguistically females are subsumed under male. Further, Women's coalition for disaster management (2005) emphasised that tsunami recovery, rehabilitation and construction process has to be based on the promotion and protection of rights rather than on a 'victim focus' which is limited on a welfare and dependency approach. Further, it was noted from few participants of the study that women were under-paid compared to men within the post disaster reconstruction.

Time constraints in utilising the loans given for reconstruction process added additional burden to people who are in affected families. The eligibility for special loans was based on the capacity to pay back the loan rather than on the vulnerability of people whose accommodation has been destroyed by Tsunami. The study found that the increased consumption of alcohol by men lead to misuse of funds allocated for reconstruction purposes. This shows the need to consider the equal distribution of funds to both men and women and to maintain a monitoring mission in order to provide effective distribution of funds for the purpose.

According to the study by National committee on women (2006), it was found that female headed households face discrimination in terms of their civil status, family and community support, property ownership, and access to resources. Patriarchal systems that exist within the community suppress women's legal rights such as property rights and land titles. Since land titles are allocated to the head of household who is generally registered as being male made concerns over the entitlements of women within the reconstruction phase. Although Sri Lankan law does not state that male is the head of household, the patriarchal systems tend to locate women in secondary position within the family based

household (National committee on women, 2006). This has been emphasised within the study's primary findings. However, government payments and interventions in the post Tsunami context target the family based household as the unit that receives payments. The head of household is eligible to receive these benefits. This leads women to a more marginalised position. A woman is usually recognised as a head of household especially in the Tsunami affected families only when her spouse departed or who is unable to provide support to the family (National committee on women, 2006).

Women's participation in reconstruction of dwellings is not always anticipated. Many women from certain parts of the affected communities mainly carry out their income earning activities in their houses. Their lack of alternative housing, and also with other cultural factors forced them to live in marginalised positions. Lack of experience/knowledge on construction of houses and their dependency on others to complete the project led them to more vulnerable positions. Further, misuse of the constructed houses for women's by others made them more vulnerable. In addition, the study was found that lack of knowledge on the usage of new technology within their houses did not offer any benefits to them. The above problems that women face within post disaster reconstruction indicate the gender disparities that are prevailing in the treatment of both genders within post disaster reconstruction.

#### **4. Discussion**

In less than a half a decade, the world has witnessed numerous catastrophes which took away many hundred thousands of lives and caused huge damages to the economy with unimaginable human sufferings. In addition to man made disasters, experts predict that the rising global temperature from climate change is yet to cause severe natural disasters around the world. One of the unprecedented disasters that occurred within the last decade was the 2004 Indian Ocean Tsunami. When a disaster strikes, the impact of the disaster depends mainly on the socio economic conditions of the particular community in addition to the scale of the cause itself. The extent of impact of the 2004 Tsunami on the communities was immense mainly due to the hazards and vulnerabilities that existed in those affected areas. Further, due to lack of consideration of local conditions the post disaster reconstruction process still remains unfinished.

The study found that during post disaster phase there is an increase in the number of gender based violence and women face issues related to health and verbal assault. This has affected women's voice especially during the earlier stages of reconstruction. In addition, it was found that there had been provision of inappropriate facilities to communities due to poor procedures in capturing women's needs, their ways of living and the existing patriarchal systems during planning stage of post disaster reconstruction. Further, it was found that in certain instances the fittings that were used for the houses were not useful to the households or those remained unutilised due to lack of knowledge or local customs. This indicates the lack of consideration of needs and difficulties of different people by the construction sector. Widely accepted attitudinal barriers that persist within the construction sector could also would have made an influence during post disaster reconstruction.

During construction phase, women faced difficulties in contributing to reconstruction of their houses due to lack of experience and knowledge on construction of houses. In certain instances, women remain marginalised due to lack of networking with people who could provide assistance on housing reconstruction compared men. The study found that poor management of construction and financial management, and dependency on others to complete the reconstruction women faced many difficulties. This indicates that the improper examination of women's skills and knowledge and the lack of support offered to them by the construction sector while carrying out the reconstruction activities. In addition, the poor developmental policies and practices that were adopted by the national and other organisations lead to further challenges.

Finally, during occupancy of constructed houses some found that lack of knowledge on the usage of new technology and education on its usage acted as barrier to communities. Although this problem persisted within both genders since women occupy the houses most of the time in those affected areas and due to cultural barriers it remain as a barrier to women. One of the main gender inequalities that remained within post disaster reconstruction is the misuse of the constructed house for women's by others. Although the construction sector provided the necessary the facilities to the community the fraudulent acts of some people within the community posed a major threat to women. This shows the need to provide support even after completing the reconstruction. Although construction sector may not be able to accommodate all the requirements of communities the coordination between different sectors need to be considered carefully for a better management of reconstruction. These problems that women face within post disaster reconstruction indicates the gender disparities that are prevailing within post disaster reconstruction.



Bearing in mind the social conditions of women and the opportunities that post disaster reconstruction can offer (Thurairajah et al, 2008) to the community, the importance of the need to address gender inequalities within post disaster reconstruction is significant.

## **5. Conclusions**

Sri Lanka has faced many natural disasters such as floods, cyclones/wind storm, drought, land slide, epidemic, etc. During the nineteenth century Sri Lanka has faced more number of flooding than other disasters. The Tsunami that occurred on the Boxing Day in 2004 killed 35,322 people and displaced about a million people in 13 districts of the country. Besides the human loss, Tsunami caused extensive loss to dwellings and infrastructure, and interrupted livelihood activities and assets that were used for business purposes. The socio economic impact was the greater consequence of Tsunami as it compounded with previously existing vulnerabilities.

One of the key issues during post disaster phase was the hidden and obvious gender inequalities that prevailed within the communities and development process. The issue of gender inequality is one of the topics that has been debated for decades. Currently the problem of inequality in employment has taken the attention of many governments and organisations. Many organisations have dedicated time and effort towards developing policies in catering to the need. Similarly, gender disparities prevailing within post disaster settings indicate the extent of the concern and the need for development. Although issues concerning women have been recognised at community level the significance of its consideration within the post disaster reconstruction remains minimal.

The study found that women face challenges such as poor procedures in capturing women's demands and the their ways of living, patriarchal systems that exists within the community, lack of experience and knowledge on construction of houses, poor management of construction and financial management, their dependency on others to complete the reconstruction, deviations from their general living patterns, misuse of the constructed house for women's by others. Although men too faced these problems the extent of its effect on them is lesser than women. These lead women to more vulnerable positions. One of the main reasons behind these challenges is the inequalities that exist within post disaster reconstruction. These inequalities could not only undermine women's position within reconstruction but also further reinforce

the already prevailing inequalities within the communities. Since the construction sector is a key sector within the reconstruction process the effect that it could make on community's development is high. Therefore, the reconstruction needs to be utilised as an opportunity to not only to develop the damaged houses and infrastructure but also to address the inequalities that prevail within the communities.

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